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The Evolution of Equine Practice

DISCUSSION BY THE CENTRAL VETERINARY SOCIETY*

Mr. G. P. MALE (Reading): When I yielded to the persuasions of your past Secretary to open the discussion on the above subject, I hardly realised its scope but was reminded by Mr. Pool that I should "weave a story of the past together with a statement of the position as it is to-day, dealing with the horse (breeds, types, uses), medical and surgical matters of outstanding importance, the changes that have occurred and the influence of the various factors that have led to the changes." I was also told by Mr. Holmes not to make it too long. Well, gentlemen, I have tried to obey both these commands. I can only give you a bird's-eye view and leave it to others to complete the picture.

First, I should like to draw you a pen picture of some of the veterinary surgeons of the past. They were very dignified persons. In London and some of the larger towns the veterinary surgeon visited his cases in a silk hat and tail coat, driving a brougham or very nice gig, while in the country he was very well dressed and drove a good-stepping pony in a dog-cart or other light conveyance. He was well known over a wide area to everybody, even more so than the squire or parson, and was highly respected. He was not only the veterinary attendant but the friend and counsellor of them all. His word was his bond and what he said was law. In those days the individual veterinary surgeon was highly esteemed, but collectively the profession was not in quite the position it occupies to-day. On the other hand, the individual to-day does not occupy that unique place of trust and respect as of yore. There are still a few bowler hats left in the profession: I saw one a short time ago on the venerable head of one of our members and it bore the scars of many combats. When cars first appeared it was thought to be an insult for a veterinary surgeon to drive in one when seeing his horse patients and my predecessor used to leave it hidden away while he interviewed his client.

Having owned, shown or judged nearly every type of horse, I have seen many changes and, looking back for nearly 50 years, I think these may be summed up as follows:—

1. The horse, except of course the Thoroughbred, is gradually being ousted by the machine.
2. The speed of the horse is increasing to correspond with mechanical power so that a more active type is being evolved.
3. Long distance work is being done by motors, the horse being used only for short journeys. This applies to the light as well as the heavy horse.
4. It is getting more difficult to find good grooms, stablemen and blacksmiths.
5. Whereas 40 to 50 years ago the horse was both economically and essentially the most important animal treated, now the horse has been superseded by the cow.
6. Owing to the want of contacts with horses and horsemen, the veterinary graduate of more recent years is lacking in experience of equine matters such as lameness, unsoundnesses and surgical conditions generally.
7. Knowledge of equine diseases is probably more advanced than that of other domesticated animals.

1. I need hardly remind London practitioners of the decrease in the number of horses and this applies equally to the country, where tractors are taking their place. The war will greatly reduce the number of hunters, while the slippery hard roads and motor traffic will kill the riding horse or hack. Instead of four to six hunters we shall now have to be content with one or two and "do them" ourselves.

2. I have seen great changes in the types of heavy horses. Fifty years ago the average Shire was a massive hairy horse with straight joints and not much activity; now, although weighty, he has clean limbs, a little straight silky hair, nice joints and feet and can move like a hackney. It was obvious that if the Shire was to retain his position for town work a more active type must be evolved, but it was not until more recent years that the present President of the Shire Horse Society brought the matter to the notice of his Council, and after strong opposition got his reforms adopted. I persuaded him to accompany me to two large studs in London, so ably presided over by Mr. McIntosh and Mr. King, and on that visit I pointed out what type was required for working on town roads.

Most of the horses from the former stud came from the North of England and South of Scotland and combined the weight and substance of the Shire with the clean limbs and activity of the Clydesdale, while you all know the magnificent horses from the latter stud.

The Suffolk Punch has also improved both in conformation and activity. He is a much better and sounder horse than formerly. The Percheron was almost unknown here until more recent years but now he has become very popular, especially in Cambridgeshire and the fen counties where the British Percheron Horse Society has been formed and is rapidly increasing its membership. The Percheron-Shire cross often produces a most useful animal both for town and country work. As to light horses, the Hackney is unfortunately gradually diminishing in numbers and there are now very few Hackney mares left in the country. There is, however, a very ready market at big prices for the best and no-one who has driven a good one will forget the thrill experienced, with which there is nothing to compare. It would be a pity if this high-couraged animal with its hard wearing and particularly sound legs were allowed to die out. It makes also an excellent cross with the thoroughbred to provide hunters, hacks and jumpers, and with the cart horse to get excellent vanners.

As to hunters, having hunted with many packs and ridden in point-to-points, I may perhaps be allowed to venture an opinion on a rather controversial point, but I think I may say that this type of horse has improved in quality and speed owing to the frequency with which it has been mated with the thoroughbred; in fact, in the Shires it is necessary to have a thoroughbred or one three-quarter-bred to keep up with hounds as the present-day hound is so much faster than his predecessors. As so much grass has been converted into arable during the war, and so much wire has been laid along ditches, post-war hunting may be at a slower pace and certainly in some counties it will be difficult to hunt at all. I trust, however, that as long as there is an England hunting will be carried on. I cannot imagine the countryside without this form of sport. The thoroughbred, although fewer in numbers owing to the war, is becoming more valuable and will be required to replenish the racing studs of the world.

Looking at the other side of the picture, there has been a great increase in the number of ladies following hounds so that now there are often as many women as men. Pony clubs have also done a great deal to popularise riding among children and the young entry of to-day have the great advantage of being taught not only how to ride but how to look after their ponies, the uses of bits and bridles and the etiquette of the chase, which is an excellent thing from every point of view.

4. As to the dearth of stablemen and blacksmiths, I hope that as a result of this meeting something may be done to encourage the young blacksmith; otherwise it will soon be impossible to get horses shod at all in some districts. County councils should be asked to give scholarships and pay for lads to become apprenticed to this trade, prizes should be given at local shows for the best workmen and, above all, good prices should be paid for this very skilled and laborious work commensurate with those paid to motor mechanics. The country smith not only shoes horses but is indispensable for mending all kinds of farm implements and many other jobs where his mechanical skill is invaluable.

5. Owing chiefly to the war the cow has become a most important animal to the national economy and to the nation's health and nutrition. It is hoped that the great bulk of the milk and milk products used in this country after the war will be provided by our own cows. Therefore she is placed Utility No. 1 and the horse takes only second place.

6. Having briefly reviewed the past and present position and outlook I would like to discuss the effects on veterinary practice and teaching. Looking back, it would seem that the graduate of 40 years ago had a more intimate knowledge of horse practice and the management and care of horses through constantly being in contact with them both during his college career and in practice afterwards. It was the general rule in those days either that a pupilage was served before going to college or that the student spent each vacation during the whole of his course with a veterinary surgeon. He was usually expected to live in and do the dispensing, and as horses were the means of transport he had daily contact with them. The teaching also laid emphasis on the horse and teachers were usually horsemen,

* At the meeting held in the Conway Hall, Red Lion Square, London, W.C.1, on Thursday, February 3rd, 1944.

or at any rate were daily enlarging and refreshing their knowledge of equine conditions. Owing to the decline in horse practice and the great increase in knowledge of diseases affecting other farm animals in this and other countries, also the great increase in small-animal practice, the horse has been relegated to the background. Although the course of study in our colleges has been extended to five years it does not, even now, allow sufficient time to cram up the amount of detailed knowledge required. More of our students are drawn from towns than formerly and having no animal background everything has to be learned about a variety of animals—an impossible task. You may say that if a student goes on a farm for the first two or three years he will get this intimate knowledge of animals. Personally, I very much doubt if this is the case, especially about horses, as on some farms there are no horses and in other cases he is acting very much as a farm labourer. I fear that the more recent graduates get less and less "horse minded" and the examination of a horse for soundness, and the diagnosis of lameness, fills many of them with dread. Just recently two horses examined for soundness have been cast for laminitis in the hind feet because grass-rings were seen on the hoofs. I am simply stating what I know and do not wish to lay any blame. On the other hand there is a great increase in knowledge by graduates of the diseases and management of other stock.

Many of the colleges are doing their best to remedy these defects and when each has its farm and hospital both teachers and students will benefit. Where students will get animal contacts in the proposed new University Veterinary Schools I fail to see. I think more time should be spent with the living animal and in learning the essentials so that the graduate can practise his profession with confidence. If he possesses a sound scientific background, is familiar with the main facts, and knows where to find the details, then he will have more time to study and master those things that a veterinary surgeon *must* know. He can then specialise in one of the many branches of veterinary science. He cannot be a specialist in them all and we should not require it. I think there will have to be specialist teachers, especially surgeons. A cattle or dog surgeon need not be, and often is not, a horse surgeon, and a poultry expert is not necessarily a specialist on cattle. This specialisation is what we should aim at as soon as funds permit.

7. As to our advances in knowledge of equine diseases during the last 50 years I think the position is satisfactory in spite of the "unbelievable ignorance" we have read about in the daily Press, though, of course, we are never satisfied. There are very few diseased conditions that cannot be diagnosed and effectively treated; in fact the position is much better than is the case with other domesticated animals, as equine diseases have been more extensively studied and for a longer period.

Perhaps I might mention some advances. More *anaesthetics* are used. I would wish that no operation, including castration, was allowed to be performed without an anaesthetic. While chloroform still holds the field as the best general anaesthetic, there are many new local ones which are very effective and not so toxic as cocaine. The range of operations has not greatly increased of late years, and owing to the decrease in horse traffic the number of operations performed has correspondingly been reduced. *Firing* is becoming a lost art in many practices, which is unfortunate as, in my experience, if skilfully performed with proper anaesthetics, it is the only effective method of relieving many forms of lameness and restoring the horse to efficient service. *Neurectomy* is not nearly so commonly performed as formerly, though it has relieved the pain and restored to service many animals that would otherwise have been useless, but here again the operation requires great skill otherwise degeneration of the hoof or tendons is a certainty. I have operated on a large number both with alcohol injections and by partial and complete excision, and many of the animals have worked for years as hunters, polo ponies and on the roads, but of course the disease still progresses, and if the horse is affected with navicular disease the useful life cannot be prolonged for any considerable time. I find that if the nerve sheath is not severed the results are better. *Lameness* is still the most difficult condition to diagnose though blocking the nerves in doubtful cases is of great assistance. *X-ray diagnosis*—which has been studied and improved upon greatly by officers of the Royal Army Veterinary Corps, some of whom are here to-day—is most useful, especially in foot lameness. Unfortunately the bones are so dense that early cases are difficult to diagnose by X-ray. By the time any changes can be distinguished the clinician can make a definite decision on the symptoms. In any case a confirmatory diagnosis is very helpful at times. Many lamenesses are, however, still a matter for the expert clinician who is constantly seeing such cases. Some years ago ultra violet rays were used for sprained tendons and joints and it was claimed for some time that the results were good. I used this treatment extensively but the results were disappointing, which was only to be expected. It is difficult to imagine how the ruptured fibres of a tendon can be reunited by any ray treatment any more than a fractured bone can be so healed. The stomach pump for administering medicines has become more popular with some veterinary surgeons but this cannot be called new as I believe it was used nearly 100 years ago and then fell into disuse, as it may again except for special cases.

It is now 35 years since Sir Frederick Hobday introduced the ventricle stripping operation for *roaring* to this country. Having myself performed the operation on more than 1,000 horses during the last 34 years I consider it a most successful one as it enables probably 90 per cent. to be used which would otherwise be useless for fast work or be condemned to wear a tracheotomy tube for the rest of their working life. Both sides of the larynx should be stripped whether the paralysis is confined to the left side or both sides are affected. After-treatment is most important.

New methods of *castration* have been devised from time to time by means of the écraseur and emasculator, but having used every method and sometimes two different ones on the same horse, so testing them, I am inclined to think that the actual cautery is probably the safest and most efficient instrument though I have had very good results with the caustic clamp. This, however, entails two visits which is sometimes difficult. The after-treatment, however, is as important as the operation itself. In obstetrics new instruments have been brought out but all these depend on the skill of the obstetrician.

In sterility treatment Dr. Hammond, Mr. Day and others have advanced our knowledge considerably. At one time the administration of hormones in the mare promised very good results. Unfortunately they are proving rather disappointing and unless further advances are made in our knowledge of their actions and interactions it may be found that the implantation of ovaries, which I advocated in 1931 at one of your Society's meetings, will eventually be rediscovered to be the most effective procedure for many cases of infertility in the mare. It is now evident that a number of hormones are necessary for successful reproduction and they must each carry out their special function at the right time otherwise the cycle is broken. To be successful in any interference one must first diagnose which hormone is not functioning and supply it at the right moment and in the right dose for that particular animal and perhaps follow up with other hormones in the same way, an almost impossible task even if a proper diagnosis could be made. By implanting healthy ovaries the natural secretions are supplied in the correct dosage; the whole endocrine system is thus stimulated and the normal functions of the animal's own ovaries are resumed. In passing I might just mention that since that date I have used this method of treatment on a number of mares, some of which had never previously bred although having been at stud for three or four years, and others that had been barren a number of years although hormones and other treatments had been given. All these animals have produced foals except in two cases and in both of these Professor Miller was good enough to examine the ovaries and found them so badly diseased that it would have been impossible for them to breed; one was over 20 years old. It may be interesting to recall that during the discussion on my paper it was stated that 80 to 90 per cent. of infertility was due to metritis, but according to statistics published by the Thoroughbred Breeders' Association on experiments carried out at Stetchworth, sterility or infertility was caused in about 63 per cent. of cases by ovarian dysfunction, while in only about 7 per cent. was any metritis present, which fully bears out my own observations and my statements at that meeting. In about 27 per cent. of cases abnormalities of the vulva and uterus were diagnosed.

Medicinal treatments have not advanced very much, I think, in the period, in spite of new drugs, serums and vaccines. I have used the sulphonamide series in some cases, particularly in strangles and pneumonia, without obtaining any marked improvement on my usual line of treatment, but I should like to hear the experiences of others on these drugs. Used locally on wounds they have proved quite satisfactory. Our knowledge of *parasitic diseases* has been greatly increased due to the good work of Messrs. Taylor, Cameron, Leiper and Hall, among others. The life histories of many parasites have been worked out and the infection of pastures demonstrated. The advent of phenothiazine was heralded with delight by the profession but after using it extensively I cannot say that it is any advance on my previous treatment; in fact I dare not use it in any badly affected animal as in several cases it has caused toxic effects and so depressed the functions of the animal that it has destroyed any chance of living that it previously had. I have also seen toxic effects in numbers of calves and, judging from a report in the *Journal of the American Medical Association*, 1943, on phenothiazine given to the human subject the results were not good. In some patients there was a decrease in haemoglobin and toxic reactions, while it did not prove an effective anthelmintic. It has the advantage that it is easily given and in healthy animals it may be used, with care, but quite recently when given in a small dose to a perfectly healthy foal it caused a bad attack of jaundice which nearly produced fatal results. I have therefore gone back to my old treatment of ol. chenopodium with other vermicides which I have used for about 35 years. It came

about in this wise : I was trying to find a good vermicide for puppies and had asked a number of drug houses to put up various preparations for me, none of which were successful in weakly puppies, and they often proved fatal. I found, however, an American preparation which expelled the worms but caused no ill effects, so had it analysed and found ol. chenopodium to be its active principle. I thought it might be effective for parasitic enteritis in horses, which proved to be the case. The results were checked up by many faecal examinations. Some years after this Hall, in America, published results with the same drug and, speaking from memory, they were 80 to 90 per cent. effective. I have elaborated the method and used it very extensively ever since. The great advantage is that the animals quickly pick up after their course of dosing, put on flesh and thrive rapidly, as can be proved by numbers of letters from owners and my own observations. In most studs now foals are dosed at weaning time and then every six months, while in some places the droppings are collected and used only for arable land. Foals are not allowed to graze after adult animals until the pastures have been rested or eaten off by cattle. In this way the bugbear of the horse world has been rendered innocuous, or at any rate kept under control. The knowledge of the care and management of mares and foals at stud has, I think, made steady progress.

In summing up, it appears to me that there has been an evolution in some directions with regard to equine practice and a devolution in others.

It has been impossible in such a short paper to give anything but a disjointed and incomplete picture of things equine, but I have tried to give a brief summary of my own results and conclusions on some conditions met with in practice over a long number of years in the hope that they may be of some interest to others treading the same path.

Equine Practice Evolution from a Military Point of View

Major D. A. Gillmor (R.A.V.C.) : There can be little doubt that throughout the ages, equine practice has been considerably influenced by the assembling of large numbers of horses for the use of the State in peace and war.

The Egyptians were the first to recognise the horse's usefulness in war and in consequence his value was considerably enhanced. As a result it was only natural that particular care should be taken to ensure greater efficiency in horsemastership and the application of curative treatment when the occasion arose.

The art of horsemastership was passed on to the Greeks, among whom it flourished, as is seen by the writings of Chiron, Xenophon and Hippocrates. From these it was in turn passed on to the Romans who took it up intensively, and many writers devoted their time to recording the knowledge which they had acquired, in addition to drawing on the experience of others.

It is much to be regretted that the period from about A.D. 300 till the 16th century was one of stasis if not of retrogression and it was not till the revival of learning, when the Greek and Latin authors were translated, that an active interest was again taken in the veterinary art.

Throughout the next two centuries the care and treatment of horses with the British Army were relegated to farriers who were men of poor education and of no scientific training. It was to be noted, however, that human surgeons attached to cavalry regiments began to take an interest in equine diseases and some of these published their findings.

Owing to the excessive wastage which occurred among the Army horses in the various campaigns it was at last decided by the authorities that qualified veterinary surgeons must be employed if the wastage was to be controlled. As a consequence of this decision Professor Coleman, Principal of the Veterinary College in London, was in 1796 appointed Principal Veterinary Surgeon to the cavalry and also Veterinary Surgeon to the Board of Ordnance. This appointment marked the beginning of the Army Veterinary Service but it was not until 1906 that the officers of the Army Veterinary Department and the N.C.O.s and men employed on Army Veterinary Services were amalgamated into one unit—the Army Veterinary Corps.

The establishment of the Army Veterinary Service brought to an end the unscientific methods of treatment adopted by the old farriers and the principles of preventive medicine were gradually introduced with excellent results. It was, at first, organised on a regimental basis which proved disadvantageous from a professional point of view, but, nevertheless, its members became the pioneers of the profession in the various territories acquired by the Empire. This was perhaps more in evidence in South Africa and India than elsewhere. One outstanding example of such work was the discovery by Evans in 1880 of trypanosomes in the blood of camels affected with surra.

Perhaps some will ask what influence the foregoing decisions had on the evolution of equine practice !

In the first place the incompetency of the farriers during their long term of office had emphasised the fact that professional advice was essential if the horses of His Majesty's Forces were to be maintained in a fit condition during peace and war. It took a long time for this to be realised but it was probably one of the main reasons why a grant was made to the Veterinary College when founded in 1791, and also why a few years later Commissions were granted to men who had completed the course laid down by that institution.

Secondly, their influence was felt when the officers of the Army Veterinary Service, by devotion to duty under all conditions of service, not only proved their worth in the control of disease amongst Army horses, but demonstrated their value to the Empire in the control and eradication of disease among the domesticated animals.

The magnitude of the task which confronted these men is easily realised when one considers the various diseases to which horses are susceptible in the different countries in which they had to serve. Take South Africa, for instance. They had to fight against African horse-sickness, epizoötic lymphangitis, glanders, diseases peculiar to the horse, as well as the numerous diseases to which cattle are susceptible, whilst in India they were faced with biliary fever, trypanosomiasis, etc., in addition. It is most unfortunate that owing to the Army Veterinary Service being entirely regimental up to the close of the 19th century, a complete account of the work performed is not available for historical research.

Even throughout the South African War, 1899-1902, it was evident that much of the wastage among animals was due to incomplete organisation. In passing, it should be pointed out that the Army Veterinary Service was not to be blamed for this state of affairs. Once the Army Veterinary Corps was formed in 1906 the picture changed completely, as is seen by the way expansion took place at the outbreak of war in 1914 and the results achieved throughout all the theatres of war.

Time will not permit me, nor is it necessary, to describe in detail the organisation which produced these results, but statistics have proved beyond doubt that the Corps, administered by its own officers, was essential to the Army if excessive wastage in war was to be avoided. His Majesty the King, in recognition of the excellent work performed during the last war, was graciously pleased to raise the Army Veterinary Corps to the status of a Royal Corps.

By discussing shortly the general procedure for the prevention and spread of disease in the Army, more particularly during the last war, a clearer view may be formed of the resulting advancement in veterinary science.

Quite a considerable contrast may be drawn between the military and civilian procedure adopted in equine practice. Under military conditions more attention is paid to the prevention and spread of disease. Where large numbers of animals are collected together this is essential and it has always been the policy of the Army Veterinary Service to instruct all concerned with horses in the principles of animal management. For this purpose, courses were held at the Army Veterinary School at Aldershot, and were much appreciated by the Officers and N.C.O.s of horsed units.

Animal management includes watering and water discipline, foods and feeding, grooming, clipping, and even acclimatisation, and a sound knowledge of all of these is essential. It has been proved beyond doubt that if sufficient attention is paid to the quality of the food given to horses and the principles of feeding, the digestive diseases to which they are subject become almost non-existent. The same applies as far as water supply and water discipline are concerned. Inattention to either of these principles very quickly produces debility and exhaustion under active service conditions.

Clipping, which is always a controversial subject, becomes a necessity where there is an outbreak of contagious skin disease. Acclimatisation is a matter which always requires attention and after a long journey horses must be given time to become accustomed to their changed circumstances and surroundings. If this is not practised there are likely to be heavy casualties, especially from respiratory diseases. This was learned early in the last war.

Hospitalisation.—An outstanding advance in the methods of procedure is seen in the establishment of hospitals and the frequency with which animals are admitted for treatment. It is never advisable to retain with a unit sick or injured animals which are not likely to recover within a short space of time. The retention of such animals utilises the service of fighting men and also impedes the mobility of the Army. On the other hand, the policy of evacuating to well-equipped hospitals, staffed with fully trained personnel, ensures the provision of the best treatment and nursing and in consequence return to work is accelerated.

The introduction of contagious diseases where large numbers of horses are collected must be carefully guarded against by the adoption of appropriate measures of inspection, isolation and evacuation of infected animals, followed by thorough disinfection, etc.

Under the conditions prevailing in civilian practice it would often be difficult to carry out such measures in detail.

Methods of control and treatment of various diseases have to be adopted which vary slightly from those in civilian practice. In the

case of mange it was found during the last war that the most practicable means of dealing with widespread outbreaks was by dipping in calcium sulphide. The solution was kept at a temperature of 42° C. and the affected animals were dipped two or three times weekly over a period of three to seven weeks according to the extent of the disease. When this treatment was adopted in France, together with the control measures previously enumerated, the incidence of the disease was considerably reduced. Other dips, such as arsenical solutions, had been tried, but the disposal of these solutions presented a difficult problem. The treatment of mange by the sodium hyposulphite and hydrochloric acid method has been adopted within the last few years. The success of this treatment depends largely on the care with which it is carried out. It is reported to be efficient, harmless and simple in the treatment of all forms of mange, but so far it has only been given limited trial in the British Army.

Glanders is another disease the control of which had always been a major problem in previous campaigns. Its incidence during the last war, however, was on the whole small. All animals purchased in the U.S.A. or Canada were tested with mallein before being shipped. They were again tested in England and again on issue to units and finally before going overseas. With these precautions it was difficult for an infected animal to pass for duty with the forces overseas.

At the outbreak of hostilities the subcutaneous test was used but later on the intradermo-palpebral test replaced it to a considerable extent. The advantages claimed for the latter were :—

(*a*) Less bulk and cost of mallein.

(*b*) It can be applied to a large number of animals quickly.

(*c*) It can be applied irrespective of high temperature, or in the presence of disease.

(*d*) Temperatures need not be taken in carrying out the test.

(*e*) The test can be repeated within 24 hours if necessary on the other eye.

(*f*) The reaction is more characteristic and delicate than that obtained with the subcutaneous method.

Whilst in the theatre of war, horses, as a routine measure, were always tested with mallein on admission to hospital and again 14 days later, and were again tested before discharge.

In the event of an outbreak all possible in-contacts were tested and put in isolation. The test was repeated in 14 days and all reactors destroyed. Under conditions such as these the I.D.P. test proved its worth and has been adopted as the routine procedure in the Army.

Other tests such as the complement-fixation test and the mallein-eye-disc test were used with success under special conditions. The eye-disc test was particularly well adapted for use under severe winter conditions in Canada

There are many other diseases foreign to this country which veterinary officers are called upon to control and treat during the course of their service, *e.g.*, trypanosomiasis, encephalomyelitis, epizoötic lymphangitis, African horse sickness, piroplasmosis and rabies.

Equine Trypanosomiasis.—Since the war 1914-18, the chemotherapeutic treatment of trypanosomiasis of man and animals has made great progress. Much of the research work in connection with the new forms of treatment of animals has been carried out by officers of the R.A.V.C., notably in the Sudan and India.

In earlier campaigns, as, for example, in East Africa during the last war, when operations had to be undertaken in fly-infested country, the incidence of trypanosomiasis in equines, with consequent high mortality, was disastrous, amounting at times to 100 per cent.

Once again in a certain theatre of war we are faced with the same problem, but thanks to the progress which has been made in the chemotherapeutical control of this disease, we are able to face the situation with some degree of confidence. We now have available a chemotherapeutical agent called antrypol, manufactured in this country, which enables us to effect a high percentage of cures.

In addition, the same agent can be employed as a prophylactic and by routine periodical intravenous injections it is possible to work equines in fly-infested countries, with a consequent greatly reduced incidence of the disease.

In spite of the progress which has already been made, much research on this disease of equines remains to be done and under the stimulus of operational necessity is being rigorously prosecuted.

Equine Encephalomyelitis.—In America the incidence of this disease, with a high mortality, presents a serious problem. Rigorous and successful investigations have been carried out, resulting in an efficient method of prophylactic vaccination.

A form of the disease has been met with in the British Army horses and mules in India and the Middle East, but fortunately in these countries its incidence and severity have been of a mild nature, compared with the disease in America.

South African Horse Sickness.—The losses resulting from this disease during the East African campaign were second only to those from trypanosomiasis. At that time it was only possible to use preventive measures such as avoiding coastal and low-lying camp sites, using smoke fires at night and other devices which would defeat the nocturnal insects, especially mosquitoes which are suspected carriers.

Considerable research work has been carried out in the meantime and it is now possible actively to immunise animals against this disease.

Piroplasmosis.—Marked progress has been made in the treatment of this disease by the use of the chemotherapeutical agents acapron and pirevan. The latter is manufactured in this country and has already been used to a considerable extent during this war. It is considered to be less toxic than acapron, which was of German origin. The general conclusion is that pirevan is safe and efficient, particularly if administered in the early stages of the disease. It is given subcutaneously, which is much more convenient than the intravenous injections of quinine acid hydrobromide which were used previously.

The method of disposal of horses and mules on the cessation of hostilities has to be carefully planned if widespread dissemination of disease is to be avoided. The demobilisation of animals after the South African War provided an object lesson not likely to be forgotten. Horses were sold at the nearest civilian depot, against the advice of the Veterinary Service, with the result that glanders and other diseases were widely disseminated. Animals were even sent to England and these brought with them epizoötic lymphangitis which spread widely and took some time to stamp out completely.

This mistake did not re-occur when horses were demobilised in 1919. The Director-General and Directors of Veterinary Services in the various theatres of war made careful plans as to disposal. All horses were tested with mallein and carefully examined for epizoötic lymphangitis before being sold. In this way no disease was spread in the various countries and no disease was introduced into this country.

Rabies, which is communicable to man and all animals, was the source of considerable trouble at the termination of the last war. In the face of stiff opposition strict quarantine measures were adopted for all dogs returning to this country, which proved to be a very wise policy as a case of rabies was detected in the first batch of dogs from overseas.

From the foregoing remarks it will be seen that the field covered by the military aspect is considerably more varied than that of the civil. All the different countries in which troops are stationed or in which campaigns are carried out have diseases peculiar to themselves. It is therefore essential that all veterinary officers should have a sound knowledge of the diseases prevalent in the country in which they are stationed.

Respiratory Diseases.—Considerable progress has been made lately in the treatment of pneumonia with sulphanilamide and much has been written on the subject. It appears to be generally accepted that this drug is of greater value in the treatment of acute generalised streptococcal infections than chronic localised conditions. When used in equine pneumonia there is a rapid reduction of temperature, the disease runs a shorter course and the period of convalescence is greatly reduced.

Strangles and Catarrh.—It is disappointing that the research work carried out both in India and at home has met with little success in the prevention of these diseases. As far as the curative action of sulphanilamide in strangles is concerned there appears to be a considerable difference of opinion. When summing up after discussing a number of cases treated with the drug at the Royal Army Veterinary School at Aldershot, it was suggested that sulphanilamide was contra-indicated since it delayed maturation of the abscesses. From experiences in the early days of the present war among impressed animals and in two outbreaks amongst remounts at a later date, it would appear to me to prolong the disease rather than curtail it.

Equine Strongylosis.—Here again the therapeutic treatment has made great strides and again R.A.V.C. Officers have given considerable assistance by recording their findings.

During the last three years much has been done by various workers to prove the efficiency of phenothiazine as an anthelmintic. All reports agree that it is almost 100 per cent. efficient against strongyles in the horse and it is now extensively used in the Army. Grahame, Morgan and Sloane, in conclusion, suggest that periodic dosing with the drug might provide a safe and easy method for the control, if not the complete eradication, of strongyles in horses. I personally had the privilege of watching the tests being carried out by these workers and since then have administered the drug to all types of Army horses without having noticed any toxic symptoms. All animals show marked improvement in condition after dosing.

Animal Surgery.—In this connection it is perhaps sufficient to say that during war the surgeon is afforded many more opportunities to practise his art than he ever has under peace conditions. This was so in the last war and considerable advancement was registered. With new bacteriostatic agents, such as sulphanilamide and penicillin,

when the latter becomes available, further progress in the treatment of surgical conditions can be anticipated.

From this survey of the evolution of equine practice the stimulus of military operations on the progress of our knowledge of veterinary science can be appreciated.

Opportunities for observation and research are often presented during war which do not occur in peace-time and can only be utilised by veterinary officers fully trained for the work. Each campaign presents new problems and it is only by careful forward planning and research that such problems can be solved with sufficient expedition to avoid high animal wastage and consequent interference with military operations.

Acknowledgments.—I desire to express my thanks to Brigadier G. A. Kelly, Lieut.-Colonel R. H. Knowles, Major A. V. Franklin and Professor T. Grahame for their suggestions in the construction of this communication.

The President (Dr. Tom Hare): On hearing Major Gillmor's fascinating account of the work of the Royal Army Veterinary Corps he could not forbear giving expression to the reflection that our Army colleagues were unduly modest. One would hope that after the war the Director-General would obtain the permission of the Army authorities to publish what was, to his mind, the greatest achievement in military veterinary transportation; namely, the transhipment of the Cavalry Division from this country right across France and the Mediterranean to the Middle East. He had the privilege at the time of keeping in touch with that enterprise in 1939 and he believed he was correct in saying that all those thousands of animals were moved with only two casualties. To the publication of this splendid achievement of the R.A.V.C. he, as a civilian, would look forward.

The second fact that could be shown by this publication was that the R.A.V.C. and not our Australian colleagues, first successfully applied curative and preventive vaccination against the *Beta haemolytic streptococcus* infection of Army horses on a large scale. That was done by our Royal Army Veterinary Corps in the winter of 1939.

He hoped the country would eventually recognise and honour those outstanding achievements of 1939. (Hear, hear.)

Mr. Walter Perryman (London): In the Preface of the Register of Veterinary Surgeons you will find it there stated, "The Veterinary art is of great antiquity, reference to the horse having been made as far back as 2,100 B.C." For our purpose to-day I think we can be content with details commencing with the end of the 18th century.

In 1791 the Veterinary College at Camden Town was opened under the guidance and care of a very capable Frenchman, St. Bel by name. He was the first teacher of merit and very enthusiastic in his work. Unfortunately he died in 1793, his death being attributed to glanders. This was a severe check to the new veterinary venture. The difficulty was to obtain a capable and sufficiently skilled man to take his place. Eventually Edward Coleman became Principal and carried on the work as such for 46 years—to be followed by Sewell and Spooner.

In 1828 the Dick College (Edinburgh) and the Highland and Agriculture Society entered into teaching and granted certificates. By 1844 the first Royal Charter was granted with the title of Royal College of Veterinary Surgeons. Examinations were held after two sessions and a period of apprenticeship. The Veterinary Surgeons Act was passed in 1881, making it compulsory that an official Register be kept, containing the names of all qualified men and a list of so-called "Registered Practitioners."

I look upon the period 1881-90 as one of the most remarkable epochs in the veterinary profession—so many really notable events occurred. The College at Camden Town had some eminent men, whose names are known to many of to-day: Professor Robertson as Principal, with others such as Penberthy, Shave, Wortley Axe and Sir George Brown. In Scotland there were Williams, McCall, M'Fadyean and Macqueen. Outside the colleges we had Pritchard, Dr. Fleming, Hunting, Fitzwygram and others. I mention all these names to emphasise the fact that many notable teachers and practitioners held a premier place in veterinary education. The present-day students and graduates have to thank the older teachers for their energy and interest in promoting advancement. These were the pioneers of the profession for whom one should be thankful.

Serious animal scourges ravaged the livestock in the latter half of the nineteenth century—notably cattle plague and bovine contagious pleuro-pneumonia. A demand was created for more and better veterinary advice and there was a big influx into the Colleges.

I would point out the difference between the teaching in those days and that of later periods when bacteriology has made such strides.

I looked upon Professor Robertson as the best up-to-date teacher and practitioner of that period. A great clinician; his book "Equine Medicine" and Williams's "Medicine and Surgery" were the text books we used—I will quote what they say in reference to strangles, showing how difficult it was for the older practitioners really to grasp the contagious nature of many diseases. Robertson wrote that there existed, ready formed in the blood of the young animal, some special material which, when acted upon by agencies from without, resulted in abscess, and Williams even classified strangles among sporadic diseases in his book on surgery and stated, "My own experience leads me to conclude that it is non-contagious," and further he said, "Whilst there is any doubt, better to take precaution and separate the affected from the healthy." The striking feature of these older writers is that they were remarkably lucid and up to date in what they said in every detail; indeed, they only want to fill in that the disease is due to the *Streptococcus* of Schütz to be modern authorities.

At this time Hunting was a very active member at Society meetings, giving papers on "Lameness in Horses" (1886) and "Hereditary Diseases" (1888).

Hunting never failed to hammer home his conviction of the contagious nature of glanders, but even he failed to convince many veterinary surgeons that it was contagious and a source of danger to many other animals unless rigid control was inforced. With the advent of mallein Hunting's life work became an accomplished fact and glanders was stamped out.

I feel I must make reference to Koch and his discovery of the tubercle bacillus (1882): I think we should give him greater credit in equine practice than perhaps we are inclined to do. Koch announced his discovery of tuberculin in 1891. It was generally given out to the world that it was the cure for tuberculosis and great hopes were raised, but unfortunately it failed to fulfil expectations. Koch gave an address before a great audience in London (I believe before the British Medical Association). Sir John M'Fadyean, a week later, replied with an element of ridicule. I was at both meetings. I think the production of tuberculin and its action on human patients suggested the manufacture and use of mallein—it proved a very reliable diagnostic agent. I used some hundreds of doses even before it became compulsory.

The advance of surgery in our profession is due in large measure to Hobday, who excelled in abdominal operations on the horse and on small animals. He was always willing to give his advice and experience to others, never withholding from the profession any details that might prove helpful. His naturally genial disposition endeared him to all, especially to his students—and his death was a great blow to everyone.

War has always brought its trail of sickness amongst men and animals. I must not trespass here as we have so many military men with us to-day. I would, however, mention that the Boer War (1899-1902) was no exception. Hundreds of animals were sent to South Africa and I believe the mortality was excessive—many arrived at Cape Town but never reached the front lines. Cape or African horse sickness was the trouble. I do not think anyone was particularly to blame; it was probably a climatic specific disease and the new importations readily succumbed.

The blame I wish to attach to Government Authority is for bringing back animals to England and introducing epizoötic (contagious) lymphangitis. I was privileged to see some animals (dead) and they were a loathsome sight. I had a case in London which Sir John M'Fadyean diagnosed for me: it was, I believe, the last case recorded in the Board of Agriculture weekly returns.

We come now to the Great War, 1914-18, when matters were far better controlled as regards disease and veterinary treatment. Many of you were participants and you know how veterinary attendance was brought to a high standard of proficiency. Mortality from disease was comparatively light. The greatest worry and anxiety was caused by skin disease (mange). This should not have been, had the disease been properly tackled at home and had all skin diseases prior to the war been made notifiable. Mange is so now, at least as regards two forms, sarcoptic and psoroptic, which attack the body. Symbiotic mange, or itchy leg, which affects the legs only, is not notifiable, and I think this should be made so as it causes serious annoyance to the animal—constant stamping and treads, often leading to septic infection and a fatal termination.

We now have in our ranks a goodly number of highly trained men and women who are capable of carrying out original research investigations. We look forward to many more when we have that £1,000,000 which is now being sought after, and when veterinary education of the highest possible standard is made available. Our graduates will be carrying out research work beneficial to man and animals alike.

[Mr. Perryman exhibited an ancient horseshoe, probably Roman, dug up from the river foreshore at Wandsworth Bridge.]

(*To be continued*)

Weekly Wisdom

"... *We want to know why the oyster is digested in the same intestine in which* Ascaris *lives and thrives unmolested. . . . it is digested because he means no more to the digestive enzymes in the intestine than any other slice of meat . . . a dead* Ascaris *will be digested . . . he, alive, produces an anti-enzyme which makes the attackers powerless.*"—Dr. Richard Goldschmidt: "Ascaris: The Biologist's Story of Life."

CLINICAL COMMUNICATION

Correction of an Unusually Large Inguinal Hernia by Radical Operation

JOAN O. JOSHUA, M.R.C.V.S.
FINCHLEY, N.3

Subject.—Ten-year-old cross-bred Pomeranian bitch, weight about 12 lb.

History.—Three years previously a swelling about the size of an orange had been noticed in the left inguinal region. At this time the dog was taken to an unqualified practitioner who diagnosed the condition correctly, but had advised that it was inoperable. The swelling remained approximately the same size for two years, after which there was progressive and comparatively rapid enlargement. There had been no evidence of ill-health until a week before I was consulted, when the bitch had shown symptoms of cystitis.

It seems reasonable to assume that three years ago the congenital epiplocele, which is frequently met in bitches, became the usual acquired metrocele, and that herniation of abdominal viscera other than the uterus and broad ligament did not occur until two years later.

Examination.—Condition was excellent. The abdomen was contracted and it was obvious that the greater part of the abdominal contents were in the hernial sac. The hernia was literally enormous, the skin being involved from the region of the umbilicus anteriorly, to that of the inner aspect of the thigh at about the level of the stifle posteriorly; it extended downwards to within one inch of the ground. The skin over the sac was exceptionally well supplied with large blood vessels but, surprisingly, was quite free from bruising or ulceration. The sound condition of the skin was undoubtedly due to the clever manner in which the bitch managed the herniated mass. Her method of going up steps was to swing the mass forwards by a jerk of the body and to "follow through" with the hind legs before the mass hit the ground; the bitch was quite as active as any dog without this impediment.

Diagnosis.—Inguinal hernia, the contents including small intestine and omentum. The cystitis was considered to be due to the recent herniation of the bladder, which could be palpated, the inflammation resulting either from the trapping of residual urine in the fundus of the bladder or to an actual plastic inflammation arising at the point of flexion through the inguinal canal.

Treatment.—Radical operation was considered to be the only treatment of value, it being clear that while symptomatic treatment might prove palliative so far as the cystitis was concerned (which in fact it did), this could not be regarded as a permanent cure. The owner's sanction was obtained, it being clearly understood that should the condition prove to be inoperable the dog would be destroyed on the table.

Operation.—Anaesthesia: Nembutal intravenously. The bitch was restrained on her back. At the time of operation the colon containing hard faecal masses could be palpated in the hernia; after consideration, it was decided not to empty the colon by enema—a decision which proved, during the course of the operation, to have been a mistaken one.

An initial skin incision of approximately four inches was made roughly in the direction of the external inguinal ring. The hernial sac was exposed by blunt dissection through the subcutaneous connective tissue; the peritoneum comprising the sac was much thickened and highly vascular.

As had been anticipated, reduction of the hernia without opening the sac proved impossible owing to the incarceration of the herniated viscera. The sac was therefore incised for a length of about four inches, care being taken to avoid blood vessels. The hernial contents were now exposed and consisted of the uterus and broad ligament, small intestine and omentum, colon and bladder. It was decided to attempt reposition of the viscera in the order of most recent herniation, thus the bladder was emptied and examined for the presence of calculi, and was then returned fairly easily through the inguinal ring. Although the external ring was approximately 1½ in. in length it was found impossible to reduce the hernia further without enlarging the ring; the ring was therefore incised at its inner limit for a distance of about ½ in. The colon was then replaced. The replacement of the remaining viscera was rendered difficult by the contracted abdomen, and at this stage the hindquarters of the bitch were raised by an assistant holding the hind legs, so that the viscera tended to drop forwards into the costal arch as they were returned to the abdominal cavity. After what seemed a long period of struggling with small intestine—which as fast as one coil was replaced herniated another loop—the remaining viscera were returned to the abdomen.

At this stage ultimate recovery of the bitch seemed most unlikely owing to the length of exposure and gross handling of the viscera; however, it was decided to continue. The hernial sac was occluded by suturing the incised edges with a No. 1 catgut, so that a funnel was formed; this was then twisted up in the usual manner and ligated at the base, the excess being cut off. The hernial ring was then occluded by suturing with a No. 2 catgut, the ring being further strengthened by suturing the inner edge to the muscle of the thigh. Fat was then drawn together to obliterate dead-space, and the skin incision closed by Halstead sutures, using No. 3 silk. The bitch was now showing signs of surgical shock, but this period was tided over by the subcutaneous administration of glucose saline.

Recovery was uneventful. Although there was infection and sloughing of some of the inguinal fat this did not occur to anything like the extent anticipated, and the bitch was sent home eleven days after the operation with only a small granulating wound remaining.

This case is recorded in view of the unusual size of the hernia and the consequent magnitude of the surgical interference, since this successful outcome demonstrates the ability of the dog's peritoneum to withstand the infection which must have resulted from the gross handling involved.

My thanks are due to Miss Bentley and Miss Freak for their assistance during this operation.

ABSTRACTS

[Chemotherapy of Streptococcal Bovine Mastitis. Bean, C. W., Miller, W. T., and Heishman, J. O. (1943.) *Amer. J. vet. Res.* **4**. 344.]

In this article the authors report the results of comparative treatment in mastitis done on a considerable scale. The agents used and compared were: acriflavine, entozon, colloidal silver oxide and tyrothricin. They were tested in six herds containing a total of 485 milking cows. At the first bacteriological examination 166 (34·2 per cent.) of the cows were infected with *Str. agalactiae*, 32 (6·6 per cent.) with *Str. uberis* (Minett's Group III) and one with *Str. dysgalactiae* (Minett's Group II). *Staph. aureus* was found in 103 (21·2 per cent.) cows. A total of 44 quarters (number of cows not stated) contained unidentified streptococci or *Str. faecalis*.

Briefly, the results indicated that acriflavine had an efficiency of 89·3 per cent. in clearing streptococcal infections in the lactating udder, entozon 60 per cent., colloidal silver oxide 71·4 per cent. and tyrothricin 51·4 per cent. In dry quarters the efficiency of acriflavine was 71·4 per cent., entozon 72·7 per cent., colloidal silver oxide 69·9 per cent. and tyrothricin 92·1 per cent.

Among some of the factors influencing results are the degree of fibrosis in the udder, the activity of the disease, the type of infection and the stage of lactation. Full details of technique are given and the article is one that should be read by all interested in the treatment of mastitis.

D. L. H.

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Staphylococcal Bovine Mastitis: I.—Artificial Exposure of the Bovine Udder to *Staphylococcus aureus*. Miller, W. T., and Heishman, J. O. (1943.) *Amer. J. vet. Res.* **4**. 318.]

In view of recent evidence that staphylococcal mastitis is of greater importance than it was originally throught to be, the authors have attempted to infect the udder by the direct inoculation of small numbers of *Staph. aureus* (700 to 30,000 organisms) up the teat canal. Seven strains were used, six isolated from milk and one of human origin: they were injected into 26 quarters on 55 occasions. Twenty-five exposures infected 22 quarters.

The seven strains varied in their infective powers. One strain injected 21 times into four quarters caused mild mastitis in two quarters. Four other strains (bovine) caused typical chronic mastitis in eight out of ten quarters exposed once. The human strain caused mastitis in two quarters after one exposure and in two quarters after two exposures: in one quarter the resulting mastitis was acute. From their experiments the authors suggest that *Staph. aureus* can be transmitted by milkers' hands and that human strains may infect the bovine udder.

D. L. H.

The day when laughter ensued in a discussion of the prowess and value of homing pigeons as messengers for the Army is long past. It is now possible to drop basket containers of pigeons from the air; a six-foot parachute is used for four-bird baskets and an eight-foot 'chute gently lets an eight-bird cage down to the ground. On some patrols, pigeons have been stuffed into a patrol member's shirt front and released under fire.—*N. Amer. Vet.*

R.C.V.S. Centenary Commemoration Plaque Unveiled in Edinburgh

Polish Acknowledgment of Facilities for Study and Research

A graceful acknowledgment of their indebtedness to the authorities at the Royal (Dick) Veterinary College, Edinburgh, and elsewhere, for the facilities for study and research which have been placed at the disposal of Polish professors of veterinary science, veterinary surgeons, and students, was made by the Polish Committee of Medical-Veterinary Study in Edinburgh at the Scottish capital on Friday, April 14th.

The Committee's tribute took the form of a memorial plaque to commemorate the centenary of the Royal College of Veterinary Surgeons, and the unveiling ceremony took place in the large hall of the "Dick" College in the presence of His Excellency Wladyslaw Raczkiewicz, President of the Polish Republic.

At the ceremony the President was accompanied by the Rev. Z. Kaczynski, Polish Minister of Education, and by General Gluchowski, Commander-in-Chief of the Polish Forces in Great Britain. The platform party also included Sir Thomas Holland, Principal and Vice-Chancellor of Edinburgh University; Baillie J. G. Banks, representing the Lord Provost; Mr. J. M. Caie, representing the Secretary of State for Scotland; Mr. Wm. Nairn, C.B.E., President of the Royal College of Veterinary Surgeons; Professor Stanislaw Runge, Chairman of the Polish Committee of Medical-Veterinary Study; and Major R. F. Brebner, C.B.E., Chairman of Directors of the Highland and Agricultural Society. Sir Arthur Olver, Principal of the College, presided.

Professor Dr. Stanislaw Runge, Chairman of the Committee, said that the hundred years of uninterrupted existence of the Royal College was the best evidence that it had well and truly carried out its responsible duties. He was voicing the feelings of his compatriots in offering to the President of the Royal College their sincere congratulations and best wishes for the future, on the occasion of their Centenary.

Professor Runge proceeded: "We know better than any other nation that there is no royal road to knowledge, and for that very reason we pursue our studies in the face of all obstacles. We learn in our own invaded country secretly in spite of terror of gallows and bayonets. We learn in the concentration camps, and as interned starving people in different countries of the world, but publicly we learn only in one stronghold of freedom in Europe—that is in Great Britain."

Dr. Runge concluded with an expression of thanks to Mr. A. Dods for the artistic work he had done in executing the plaque.

Mr. Wm. Nairn, President of the Royal College of Veterinary Surgeons, said the Council of the Royal College was happy to learn that in some of its affiliated schools the members of the Polish veterinary profession found sanctuary, and that they were able to continue the training of young men for the pursuit of veterinary science in their own land when peace returned.

"The Council of the Royal College was deeply touched," continued the President, "when it learned that our Polish friends, in spite of all their anxieties about their homes, desired to mark the passing of an important milestone in our history—the centenary of our Charter. History shows that there has been an old connection between Scotland and Poland—a notable Prince of our Royal Family married a Polish lady—and it would appear to be very fitting that your memorial should be placed in Edinburgh. Needless to say it will be treasured with respect and pride as the memorial of a brave people who suffered much in resisting aggression.

"While this generation of undergraduates will not require any memorial to the present, it may well be that the undergraduates in the future should be reminded not only of that important event in veterinary history—the centenary of our Charter of Incorporation which really created our profession—but also of the fine qualities of the people of Poland, who endured five tragic years. It is our fervent wish that soon the sorrows and tragedies of war will recede from your land and that when your young scientists return to their homes they will be equipped to relight the lamps of science once more and that these will never be extinguished again."

Sir Arthur Olver first expressed to Professor Runge and his colleagues "our great appreciation of the handsome plaque with which they have presented us and of the kind thought which prompted them to do so." Any service which that College was privileged to render to their Polish colleagues was a pleasure, and a duty to veterinary science.

From its long history of struggle against adversity, we could be sure that the Polish nation would rise again and re-establish the high spiritual and cultural qualities which it had so long maintained under oppression, and it would be a great source of pleasure to them if they could feel that that College had been able to assist in keeping alight the lamp of veterinary science in Poland which had always valued its livestock highly, and in which country the veterinary profession, in the few years which had elapsed since it achieved its liberation after the last war, had already succeeded in building up a veterinary organisation which in some important respects was ahead of what we in this country had been able to achieve during a much longer period.

Sir Arthur then gave an account of some of the difficulties which were encountered in the inception and eventual establishment of the Royal (Dick) College, and went on to say that schemes for further development of veterinary education and the veterinary services in this country were at present in the air. They might hope that after the war more might be done to place veterinary work in this country on the much broader basis on which it was placed in most Continental and other civilised countries, in particular the U.S.A.

He would like to assure their Excellencies, Professor Runge, and his colleagues that the plaque which they had so kindly presented to them would be treasured as a valued memento of their very happy association during the time of their national tragedy. He asked them to accept their very sincere thanks for the kind thought which prompted them to pay such a handsome tribute to the small services they were so glad to give them. To assist our stricken ally in the rehabilitation of its veterinary services was but to conform with the spirit of the admirable motto of the Polish veterinary profession, "*Non solum nobis.*"

President Raczkiewicz thanked the College for what it had done for Polish veterinary education. He said: "Poland is an agricultural land, and has always been very interested in creating schools of veterinary surgery. There were 1,500 veterinary surgeons in Poland before the war. After the war, owing to German persecution and deportation and the national death rate, this figure will be greatly reduced. The Polish universities were closed by the Germans, and so there is no possibility of educating new veterinary surgeons in Poland. Not only this college, but your many other colleges and universities have helped our veterinary surgeons to keep up with the developments in modern veterinary science, and also our students to continue their studies. The Royal (Dick) College has been outstandingly helpful."

His Excellency then unveiled the plaque.

Before the President left the College, a number of the Polish students and others were presented to him.

IN PARLIAMENT

Taxation Policy to Assist Scientific Research

It is encouraging to know not only that the Parliamentary and Scientific Committee were able to stimulate the full-dress debate on scientific research reported in our Parliamentary columns last week, but that many of the suggestions put forward by them to the Lord President of the Council, the Chancellor of the Exchequer and the three other Ministers at their recent deputation have been incorporated in the Budget so far as research is concerned.

With the House in committee to receive the Chancellor's financial statement on Tuesday of last week, the Chancellor (Sir John Anderson), in the course of his Budget speech, followed a reference to the provision of ample facilities for long-term loans at reasonable rates to agriculturalists to enable them, among other things, to repair and improve farm buildings, by an important statement on the Government's proposals in pursuance of a taxation policy which would assist scientific research. On an occasion when the underlying theme was the fundamental economic stability of the nation, emphasis naturally was placed upon the industrial aspect of research, but in his reply to the debate the Chancellor made it clear that medical and agricultural research would be treated on exactly the same footing as industrial research.

In his speech Sir John Anderson recalled that the taxation aspect of this matter was mentioned in the debate to which reference is made above. Research had three aspects. There was the fundamental research of the scientists, whether at the university, or in the laboratories attached to industrial establishments or industrial organisations. Successful research was not a mass product. It did not flow merely from numbers of research workers. It required an imaginative quality of the mind. Without fundamental research there could be no hope of steady progress and still less of those strange leaps of creative intelligence which produce in peace no less than in war some of the most important discoveries. To industry research had a limited value if it stopped at the laboratory. Every industrialist knew it was a real difficulty to translate the delicate skill of the scientific researcher and the artificial conditons in which he might have worked into terms of large-scale production. He (Sir J. Anderson) believed that in this country we had perhaps been slow in developing this essential stage. The next and final stage was the commercial production of the product. These were the three integral parts of the same creative process. To fail in any one was to fail over the whole.

Therefore, in considering the help which taxation policy could give to research, his aim had been to help the whole process. It was most desirable that industry should know in advance the taxation treatment which would be accorded to research expenditure which would be undertaken when hostilities ceased. He proposed, therefore, to include provisions on this matter in the forthcoming Finance Bill.

The Committee would agree that expenditure on research stood on a different footing from the other expenditure of a trader. It was not immediately related to the making of profits as in the case of expenditure incurred in the manufacture and sale of goods, nor did the benefits accrue merely to the originator. His proposal was that any research expenditure of a capital character, which meant normal expenditure on laboratory buildings, plant and machinery, should be allowed over a period of five years, or over the life of the assets, if shorter, as a deduction from profits for income tax purposes. In addition, all current research expenditure such as salaries, wages, cost of materials, repairs and so forth would be allowed as and when incurred by the trader. This allowance of capital expenditure over a period of five years would be the rule for research carried out by a trading concern on its own account. In addition, he proposed that any payment, whether for a capital purpose or not, made by a trade to a central research body approved by the Department of Scientific and Industrial Research should be allowed, as and when made, as a deduction in computing the profits of the concern. Contributions to research being carried out by a university or college on matters of concern to the traders' business would similarly be annulled.

"I hope the Committee will agree" (continued the right hon. gentleman) "that in this comprehensive attempt to relieve from taxation altogether funds devoted by industry to the support of fundamental research, to the translation of laboratory research into production, and to the full-scale development of the product, the Board of Inland Revenue have tackled the problem with a sense of realities, born out of their close interest in the effects of taxation upon industrial recovery and the buoyancy of the revenue. I believe that in what I propose I am meeting all the reasonable claims of industry for adapting taxation policy to the development of industrial research.

"There is too much evidence that before the war we were falling behind other important industrial countries in the range, although not necessarily in the quality, of our industrial research and its application. The war has demonstrated to the world that the quality is there, and the war gave financial opportunities of extended range. I am trying to carry forward, within practical limits, to the solution of our urgent peace-time problems of production significant financial help. I have no doubt that the industry will respond over a wide field. The ideal towards which we ought to move is a general practice by which each manufacturer devotes a contribution, measured by his own turnover, to the furtherance of scientific knowledge.

"I hope also that there will be a much wider pooling of ideas and technique in the development of research, even down to the production of what I have heard described as the mysterious catalyst, the 'know-how.' In many fields we have a lot of leeway to make up, and co-operation is essential. Economy of time, money and skilled personnel all will be in short supply, and in some cases very short supply, after the war. I think that the industrial research worker should be encouraged to regard himself not only as serving the organisation which pays him, but as contributing to the sum of available knowledge and enlarging the horizons of the material world. We must provide our research workers not only with the physical apparatus which supplies their needs, but with the motive which evokes their native powers."

A National Advisory Service for Agriculture

On Wednesday of last week the Minister of Agriculture presented to Parliament the Agriculture (Miscellaneous Provisions) Bill which provides, *inter alia*, for the setting up of a National Advisory Service by unifying and combining the provincial and county services into one body directly under the Minister of Agriculture and financed wholly by the Exchequer.

The Bill "requires the Minister of Agriculture and Fisheries to set up a National Advisory Service for the provision of advice to those engaged in the agricultural industry." It provides an option of transfer to the service of the Ministry to persons employed in connection with advisory work by County Councils or by Universities and Agricultural Colleges in such a way as to safeguard the position of officers who might otherwise lose their employment as the result of the transfer of functions and at the same time to ensure that the position of the previous employers is not prejudiced. Provision is also made in the Schedule for the necessary superannuation conditions (*Clause 1*).

The machinery for the provision to agriculturists of long-term loans at low interest rates—for the maintenance of farm buildings, etc.—to which the Chancellor made reference in his Budget speech, is indicated (*Clause 2*).

Clause 5 extends the provisions of Section 3 of the Agriculture (Miscellaneous Provisions) Act, 1941, which authorises Exchequer grants for the supply of water to agricultural land, to the supply of water to farmhouses and cottages in addition.

Clause 6 extends the provisions of the Improvement of Livestock (Licensing of Bulls) Act, 1931, to pigs. This will entail some increase in the Inspectorate of the Ministry.

Clause 8 provides for the application of the Bill to Scotland.

The formation of a national service, originally announced by Mr. Hudson in the House of Commons on January 20th, implements one of the main recommendations in the report of the Luxmoore Committee. The cost to the Exchequer of the scheme is expected to be about £1,000,000 in the first year of its operation and, later, about £1,500,000 a year. In the last year before the war the Exchequer's contribution to the advisory services was about £300,000.

Questions

Farm Buildings and Equipment

Mr. De la Bere asked the Minister of Agriculture whether, in view of his request to the farmers throughout the country for a greater measure of efficiency, he can now make some statement as to the Government's policy both for the repairs to farm buildings and the erection of new ones at the conclusion of hostilities; and if it is the Government's intention to set up a centralised body for the supply of farm implements and machinery.

The Minister of Agriculture (Mr. R. S. Hudson). Both these matters will be considered in connection with Government policy during the period after the end of hostilities. **(See, however, Budget statement above.—*Editor.*)**

[As intimated in our Notes and News columns, members of the N.V.M.A. receive, with this issue of *The Veterinary Record*, the "Memorandum on Farm Buildings" prepared by the Joint Veterinary Officers and Public Health and Parliamentary Committee and approved by the Council for circulation as one of the publications of the Association.]

Milch Cows (Tuberculin Tests)

Colonel Carver asked the Minister of Agriculture the results during the past 12 months of the tuberculin testing of milch cows; and the number of animals which have reacted.

Mr. Hudson: Official tuberculin tests are made of all cattle in T.T. herds and attested herds. During the 12 months ended March 31st last, 662,000 cattle were included in tests of T.T. herds, of which 5,100, or 0·8 per cent., reacted, and 704,000 cattle were included in tests of attested herds of which 2,600, or 0·4 per cent., reacted. Separate figures for milch cows only are not available. Since some herds were tested more than once during the year, the figures do not represent the number of individual cattle in the herds tested. The figures for those T.T. herds which are also attested are included both in the figures for T.T. herds and in those for attested herds.

Livestock Production

Mr. Price asked the Minister of Agriculture whether he will consider summoning a conference of the breed societies, the Royal Agricultural Society, the Milk Marketing Board and the war agricultural executives, with a view to drawing up a plan for improving the breed of livestock, and more particularly, for raising the milk yield of dairy cattle while maintaining a healthy stock and without too much reference to show points.

Mr. Hudson: A plan for the improvement of livestock breeding, with special reference to raising the standard of our commercial dairy cattle, was put before county war agricultural executive committees and the farming community last year. Good progress in the execution of this plan has been made in a number of counties. I have also had a conference with the breed societies on the contribution which they can make in carrying out this policy. Further ideas for improving the efficiency of livestock production are now being examined in consultation with representative livestock breeders and technical experts. This method of approach should achieve the hon. Member's object.

Mr. Price: Will the Minister bear in mind the importance of considering the utility value of cattle rather than just show points?

Mr. Hudson: That is very much in my mind.

Breeding Stock (Improvement)

Colonel Carver asked the Minister of Agriculture whether, to remove adverse criticism on British cattle, he is advocating improvement in any special degree herds which are regarded as markedly suitable to Great Britain.

Mr. Hudson: No, Sir. The adverse criticism of British cattle to which my hon. and gallant Friend refers, has been directed to the standards of certain commercial herds of non-pedigree cattle, not to pedigree stock. For some time I have been advocating the

use of better breeding stock, particularly bulls, as well as the adoption of a consistent breeding policy, with the object of effecting an improvement in the general standard of quality of our commercial cattle. Pedigree breeders can play an important part in promoting such an improvement by catering for a wider market than has often been the practice in the past.

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Bulls (Licensing)

Mr. Price asked the Minister of Agriculture the number of bulls which have been rejected for licensing in England and Wales during the last 12 months; and how many of these rejected bulls have been granted licence on appeal.

Mr. Hudson: During the year ended March 31st last, 8,503 bulls were rejected for licence by Livestock Officers in England and Wales. Appeals were lodged in 1,098 cases and of these 506 were successful.

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Collarless Dogs

Mr. R. Morgan asked the Secretary of State for the Home Department whether he is aware that many dog owners allow their dogs in the highway without collars bearing their owner's name and address and as a result dogs are lost and cannot be restored to their owners; and whether he will take steps to reduce these offences by giving instructions for a general police warning.

Mr. H. Morrison: I should be reluctant to add to the burdens of the police at this time. I hope that the publicity given to this Question and answer will be sufficient to call public attention to the provisions of the law referred to by my hon. Friend.

NOTES AND NEWS

The Editor will be glad to receive items of professional interest for inclusion in these columns.

Diary of Events

May 9th.—**R.C.V.S. Council Election.** Last date for receipt of nominations.
May 10th.—Meeting of the Editorial Committee, N.V.M.A., at 36, Gordon Square, W.C.1, 2.30 p.m.
May 11th.—Meeting of the South-Eastern Division, N.V.M.A., at Tonbridge, 2.30 p.m.
May 16th.—Meeting of the Joint Veterinary Officers and Public Health and Parliamentary Committee, at 11.30 a.m.; Meeting of the Finance and General Purposes Committee, at 2 p.m.; both at 36, Gordon Square, W.C.1.
May 16th.—Spring Meeting of the Eastern Counties Division, N.V.M.A., at Cambridge, 2 p.m.
May 22nd.—R.C.V.S. Council Election. Voting papers issued.
May 30th.—R.C.V.S. Council Election. Last day for receipt of voting papers.
June 6th.—**R.C.V.S. Annual General Meeting.**
June 7th.—R.C.V.S. Committee Meetings.
June 8th.—**R.C.V.S. Council Meetings.**
June 27th.—R.C.V.S. Examinations begin (provisional date).

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Two New N.V.M.A. Publications

With this issue of *The Veterinary Record* members of the National Veterinary Medical Association will receive two more of the publications which it is hoped may become valuable assets to those engaged in busy practice: *viz.*, Section II, "*Diseases of Sheep*," of the Reports on Diseases of Farm Livestock series, and the "*Memorandum on Farm Buildings*."

Both of these publications have an important bearing upon modern veterinary practice; each is worthy of careful study, not only for immediate purposes, but also from the aspect of post-war developments.

It is perhaps desirable to indicate that these publications are the result of joint effort by members of the Association; the former is the work of the Survey Committee and the latter of the Joint Veterinary Officers and Public Health and Parliamentary Committee. Each has been accepted by the Council of the Association and approved for circulation. They can fairly be regarded as containing the views and experience of modern veterinarians and as such are authentic, but like all technical publications they will become out of date in ratio with the speed of progress of research and the accumulation of knowledge and experience.

It is the hope of the Officers of the Association, and of those who have helped in their preparation, that practitioners and others will find them useful for study and reference.

PERSONAL

Births.—Bowen.—On April 25th, 1944, at Montgomery, to Joan (*née* Thicke), wife of P. D. G. Bowen, M.R.C.V.S. (Cadet Royal Artillery), a son (Stephen).

Cameron.—On April 5th, at Barnstaple, to Elizabeth, wife of Ian W. Cameron, B.Sc., M.R.C.V.S.—a son.

Forgrave.—On April 27th, 1944, at the Nursing Home, Grosvenor Road, Wrexham, to Edie, wife of W. Forgrave, M.R.C.V.S., a daughter.

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Marriage.—Harries—Morris.—On April 12th, at Tyrhos Chapel, Kilgerran, Pembrokeshire, J. Oswyn Harries, B.V.Sc., M.R.C.V.S., only son of Mr. D. W. Harries and the late Mrs. Harries, Rhosygadair Newydd, Cardigan, to Mary Elizabeth (Molly) Morris, only daughter of Mr. and Mrs. J. O. Morris, Gerallt, Rhoshill, Kilgerran, Pembrokeshire.

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Presentation to Mr. S. J. Motton.—The opportunity was taken at the 60th annual meeting of the Western Counties Division of making a presentation to the Hon. Secretary, Mr. S. J. Motton, who has worked so hard for the Division for the past 12 years and who, it is hoped, will continue this valued service for many more years to come. The presentation took the form of a solid silver rose bowl, a paper knife and a dish.

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R.C.V.S. OBITUARY

Foulston, J. G., Oldham, Lancs. Graduated London, July 13th, 1923. Died April 9th, 1944.

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We regret to learn, from the January issue of the *Recueil de Médecine Vétérinaire*, of the death of Dr. Paul Rinjard, Director of the National Institute Laboratories, Alfort Veterinary School.

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INSTITUTE FOR THE STUDY OF ANIMAL BEHAVIOUR

The following have been admitted to membership of the Institute:—

A. Brownlee, M.R.C.V.S. (Compton); J. T. Edwards, D.Sc., M.R.C.V.S (Pirbright); R. A. Edwards, M.R.C.V.S. (Rochester); C. Horton-Smith, B.Sc., D.I.C. (Weybridge); C. W. Hume, M.C., B.Sc. (Finchley); Geoffrey Lapage, M.A., M.D., M.Sc. (Cambridge); J. D. Loughran, M.R.C.V.S. (Alford); F. H. A. Marshall, Sc.D., F.R.S. (Cambridge); Mary F. Moore, B.A. (Oxford); Henry G. Maurice, C.B.E., Stuart G. Smith, B.Sc., PH.D. (Gatley); Tom Spence, M.R.C.V.S. (Weybridge); E. L. Taylor, D.V.Sc., M.R.C.V.S., N.D.A. (Weybridge); P. T. Tunney, M.R.C.V.S. (Norwich); and Jean Vinter, M.D. (Finchley). Dr. J. T. Edwards and Dr. A. Walton (Cambridge) have been co-opted members of Council.

As previously announced in these columns, a joint meeting of I.S.A.B. and the Royal Society of Medicine (Comparative Section) will be held on June 21st, 1944, at the Royal Society of Medicine, 1, Wimpole Street, London, W.1 (2.15 for 2.30 p.m.).

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ARTIFICIAL INSEMINATION: N.F.U. RECOMMENDATIONS

At a recent meeting of the Council of the National Farmers' Union a report containing the following recommendations on artificial insemination was approved:—

(1) That it is essential that artificial insemination should be developed under a national scheme.

(2) That a National Policy Committee should be constituted composed of four representatives each of the Ministry of Agriculture, N.F.U., Milk Board, and the breed societies, and two representatives of the veterinary profession.

(3) That the National Committee should deal with policy and that inspection reports should be submitted.

(4) That the Ministry of Agriculture should be the licensing and inspecting authority and should issue or refuse licences on the advice of the National Policy Committee.

(5) That the Board, with its national organisation, appears to be the best fitted to render valuable assistance to the National Committee in developing and administering artificial insemination centres within a national scheme while not excluding the possibility of other bodies of organised producers being licensed to operate centres.

(6) That strong local committees should be set up to assist in running local artificial insemination centres.

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ROYAL ARMY VETERINARY CORPS

The following announcement is made in the issue of the *London Gazette* dated April 21st, 1944: To be Lts.: Robert Alexander Brown (309513), James Francis Donnelly, B.V.Sc. (313244), March 21st, 1944; Frank Keith Fletcher (313189), Wallace Brian Vaughan Sinclair (313188), March 23rd, 1944.

H.M. STATIONERY OFFICE PUBLICATIONS

The undermentioned have been published recently. Copies can be purchased through any bookseller, or directly from H.M. Stationery Office.

	Price net	Post free
	s. d.	s. d.
COMMAND PAPERS (Session 1943-44):		
(6517.) Veterinary Education in Great Britain, Committee on. (Chairman, Mr. Thomas Loveday, M.A., LL.D.) 2nd Report. February, 1944	0 6	0 7
HOUSE OF COMMONS BILLS (Session 1943-44):		
19. Agriculture (Miscellaneous Provisions) ...	0 3	0 4
AGRICULTURE AND FISHERIES, MINISTRY OF:		
Bulletin No. 124. The Composition and Nutritive Value of Feeding-stuffs. (By H. E. Woodman, M.A., PH.D., D.SC.) 2nd Edition, April, 1944. (24-204-24-44)	0 6	0 7
COLONIAL OFFICE:		
Oversea Education, Quarterly, Vol. XV, No. 3, April, 1944. (72-6-4-44)	4 0	1 2

CORRESPONDENCE

The views expressed in letters addressed to the Editor represent the personal views of the writer only and must not be taken as expressing the opinion or having received the approval of the N.V.M.A.

Letters to the Editor should reach the Office not later than by the first post on Monday morning for insertion in following Saturday's issue.

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LOVEDAY COMMITTEE'S SECOND REPORT ON VETERINARY EDUCATION

Sir,—The short summary published in the current *Record* of the findings and recommendations of the Loveday (re-called) Committee on Veterinary Education requires an emphatic rejoinder by members of the profession.

PARA. 1. Veterinary education does not depend upon a healthy and prosperous condition of agriculture. This *education* is a necessity, quite apart from the prosperity of agriculture. A fully prosperous agriculture depends on a fully informed veterinary profession.

2. The second sentence of this paragraph is unfortunately worded. Additional schools and teachers will not necessarily increase *the scale of knowledge*, while it may quite likely increase the number of practitioners.

Many present-day practitioners are not overburdened with work. Almost all, certainly about 90 per cent. of them, can undertake a good deal of routine inspection work, properly spread over the week, in addition to their present commitments.

3. An annual increment of 220 gross means about or around 100 net increase. Has the Ministry of Agriculture informed the Committee on what grounds the Ministry has based its figures and ideas?

4. "*Placed within Universities.*" This shows that the Committee has misconceived its terms of reference and has misdirected itself. The Committee was not called together to draw up terms for the absorption of the teaching side of the veterinary profession into any outside body.

5. It would be a good thing for the Committee if it stated its reasons for "*can be secured only by persuading universities to undertake responsibility for that training*" and said who wants to persuade anyone to touch, much less interfere with, the veterinary profession as at present constituted.

Does this Committee presume to imply that the past has been misused? Is it not abundantly clear that the profession has up to these present times made ample strides and has already of its own volition attained a standard of education that is beyond cavil on a par with any other profession, and better than most? Any recognition, from any body or persons, of the standard and quality of veterinary education, as stated in this paragraph, would be gratuitous.

Registration or registrable qualification by a university means at "*rock bottom*" a diploma from a teaching school, and it is a play on words attempting to make a distinction between a "*diploma*" and a "*degree.*" A sufficient minimum standard of training is already in being and is absolutely assured by the examinations carried out by the R.C.V.S. This report, by its silence, admits that this is so, although from the whole tenor of the report it desires, or would like, to damn with faint praise.

6. This is an attempt to override the *R.C.V.S. diploma* by a "*degree.*" Acceptance of this is good-bye to the R.C.V.S. and *the one-portal entry.*

7. This is gagging and handcuffing *as mistress in her own house of the veterinary profession*, handing over authority to an interloper, who can and might conceivably prostitute us to unworthy ends.

9. This shows up more luridly, that the bosses are to be the *universities*, because all that this Committee dares to say here is "*strongly urged to include*"—it dared not say "*must.*"

10. In this paragraph the R.C.V.S. *are to be graciously allowed to carry on as before on the remnants left over.*

Note carefully that the universities are to be solely responsible for their own examinations.

If and when this is conceded the R.C.V.S. is obsolescent.

11. This is an introvert's excuse or justification for having purloined the estate of the heir.

13. Might this paragraph be explained? Where are the patients to come from? Will they include dogs and cats? A clear answer to this is a necessity.

19. This paragraph simply means, to get into a university on any terms this Committee will go in, even on its belly at a crawl, grovelling.

Yours faithfully,

Bres Foye, J. CAMPBELL HILL.
Als Street, Llanelly.
April 25th, 1944.

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THE ONE-PORTAL SYSTEM AND THE COMING R.C.V.S. ELECTIONS

Sir,—Reading those letters appearing in the *Record* in recent weeks makes one ask, "Is there something seriously wrong with the R.C.V.S.? Is it tottering and about to crumble, with its impregnable fortress our 'one Port of Entry'"? When one has men like Mr. Matthews proclaiming that we are not a scientific body and are without scientific training, one must think that some members are suffering from an "inferiority complex" straining after that will-o'-the-wisp, that myth, "university status."

In this, the Centenary year of our consolidation, let us consider some facts.

No one can deny that the profession has advanced in every sense in the last century. Our members are now practically in control of veterinary services in every branch of life that has to do with veterinary work—Government posts, Board of Agriculture, Local Government, Boards of Health, etc. Some of our members have attained the highest pinnacles in science; their work has been acknowledged the world over, and they have been honoured by States and scientific bodies for their work as veterinary scientists.

The universities do not always turn out scientists; the true scientist is born with the God-given scientific mind and many great scientists have never seen the inside of a university.

The average veterinary graduate can compare favourably with the average medical. Our one Port of Entry is the envy of the medical profession, and we want no back doors: let every member, going for election to Council, be pledged to maintain it. As a past member of Council for many years, I am still deeply interested and hope the same standard of progress will be maintained and that the second Centenary will find the veterinary profession still climbing. The R.C.V.S. has not done badly, but let there be no lowering of the flag. Let our Council see that veterinary schools are equipped with every facility for training; let them secure a high standard of education and examination and enforce a high standard of moral and ethical conduct and there is little fear of the future. There is nothing to prevent any man from securing a University Degree, if he so wishes, and by all means encourage men to secure academic honours, but give no right of entry to the profession other than by way of examinations of the R.C.V.S. The world wants men, not duds, and the world will accept and appraise as it finds them. The number of letters after his name will be of little avail if a man is not capable of fulfilling his mission in life.

Yours faithfully.

Cushnahouna, Ennis, Co. Clare. P. J. HOWARD.
April 17th, 1944.

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METHOD OF PRESERVING CAMELS' MILK

Sir,—In this country we have at certain times of the year a large surplus of camels' milk, and during much of the rest of the year there is a drought and food is scarce. Ghee is made, but the yield of ghee is only slight from camels' milk, and it is not used to any great extent for this purpose; sheep, goat and cow milk are chiefly used for ghee making.

My problem is to find a method of preserving this milk for use in the dry season. The Somali is not averse to using sour milk, and in fact prefers it to sweet milk. It occurs to me that among your readers there may be some who could throw interesting light on this problem which must arise and be solved in other camel countries.

I am, Sir,

Yours faithfully,

EDWARD F. PECK,
Chief Veterinary Officer.
Veterinary Department,
Burao, Somaliland Protectorate.
March 21st, 1944.